

## PATENT SPECIFICATION



Application Date: May 22, 1940. No. 9070 40.

551,713

Complete Specification Left: May 12, 1941.

Complete Specification Accepted: March 8, 1943.

## PROVISIONAL SPECIFICATION

## Improvements in Surgical Dressings

I, HENRY GLEGE STEEL, a British subject, of "The Needles", Barton-on-Sea, Hampshire, do hereby declare the nature of this invention to be as follows:—

- 5 This invention relates to surgical dressings intended for use either upon injuries, sores, breaking down of skin or tissue, wounds or in cases where there is no breach or threatened breach of the skin, and the primary object of the invention is the provision of a dressing which will not adhere to the wound, gathering or the like and which in consequence can be removed without the necessity for soaking off, and without causing pain or disturbance to the wound or the like. The invention further aims at providing a dressing in which the curative properties of any medicament embodied therein will be utilised to a greater extent than obtains with surgical dressings of existing kinds.

- The invention consists in impregnating an absorbent substance such as gauze, wool, lint or suitable fabric with a compound which contains a wax, varnish or equivalent substance having the property of becoming emollient at the temperature of the body and which contains also any medicinal, hygroscopic or other substance, the presence of which is necessary for the treatment of the wound, gathering or the like. By reason of the wax, varnish or the equivalent remaining emollient at body temperature there will be no tendency for the dressing to become dry and to adhere even when same is used for absorbing discharges; consequently there will be no subsequent difficulty in removing the dressing or need for soaking off.

- According to one embodiment of the invention, the emollient element of the compound is composed of a mixture of hard and soft paraffin wax, these being so blended that the product will become emollient at body temperature. The medicament, hygroscopic or other substance to effect treatment is added to the mixture of waxes after heating same, and the whole is intimately mixed. Strips of any suitable absorbent substance are then passed through the compound and

if necessary (i.e. in most cases where a medicament is incorporated) any surplus is removed from the strip by a scraping, rolling or other operation, before and after the compound dries; the final scraping breaks down any surface molecules. The strip can now be rolled up if so desired, so as to be ready for use, or it may be cut into pieces of suitable size.

As examples of suitable medicaments that may be employed there are mentioned iodine, acriflavine, and mercurial substances, any of which may be used alone or in combination, but as will be clearly understood any medicinal substance or combination of substances can be used, in cases where a medicament is required.

It will be found that due to the wax or varnish keeping the compound in an emollient condition, the curative properties of any medicament embodied in the dressing are utilised to a greater and more beneficial extent than has been possible hitherto, the reason being that there is greater absorption of the medicament and non-disturbance of the dressing.

In some cases, it will be required to embody in the compound a hygroscopic substance or substances in addition to or instead of a medicament. In this connection selection can be made from those substances which are known to be hygroscopic and which will not have harmful results. By way of example, the hygroscopic element may be a substance normally crystalline from which the water of crystallisation has been driven off wholly or partly. Magnesium sulphate is a suitable substance. Glycerine can be additionally employed. The hygroscopic substance or compound of substances is added to the wax or varnish and the whole, whilst hot, is intimately mixed by stirring. The absorbent strip is impregnated as above explained but the scraping process is omitted in this case. Whether or not a medicament is incorporated together with the hygroscopic substance or substances will depend on the intended use of the dressing.

The dressing containing a hygroscopic substance as above set forth is applicable for use on wounds and gatherings which require to be evacuated, the evacuation taking place by osmosis.

In some cases and if so desired the dressing made as aforesaid may be of perforated form.

Dated this 22nd day of May, 1940.  
KINGS PATENT AGENCY LIMITED.

By B. T. KING, A.I.Mech.E.,  
Director.

Registered Patent Agent,  
146A, Queen Victoria Street, London,  
E.C.4,  
Agents for Applicant.

## COMPLETE SPECIFICATION

### Improvements in Surgical Dressings

I, HENRY GOLEGE STEEL, a British subject, of "The Needles", Barton-on-Sea, Hampshire, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to surgical dressings intended for use either upon injuries, sores, breaking down of skin or tissue, wounds or in cases where there is no breach or threatened breach of the skin, and the primary object of the invention is the provision of a dressing which will not adhere to the wound, gathering or the like and which in consequence can be removed without the necessity for soaking off, and without causing pain or disturbance to the wound or the like. The invention further aims at providing a dressing in which the curative properties of any medicament embodied therein will be utilised to a greater extent than obtains with surgical dressings of existing kinds.

The invention consists in impregnating or coating an absorbent substance such as gauze, wool, lint or suitable textile fabric with a medicinal, hygroscopic or other curative substance, the presence of which is necessary for the treatment of a wound, gathering or the like and also impregnating or coating said substance with a wax, varnish or equivalent substance having the property of becoming emollient at body temperature but which is firm at ordinary temperature.

In one mode of carrying out the invention, the curative substance and the emollient substance are formed into a compound applied to the absorbent material in one operation, whilst in another manner of carrying out the invention the curative substance is first applied to the absorbent material and the emollient substance is afterwards applied.

In the first of the above methods the absorbent material may be dipped into the compound, or said compound may be sprayed on to the material, or the latter can be impregnated therewith in any

other suitable way. In the second method the absorbent material is impregnated or coated with the curative substance in any suitable way and the emollient substance is afterwards applied to the material by a dipping or spraying operation.

By reason of the wax, varnish or the equivalent remaining emollient at body temperature there will be no tendency for the dressing to become dry and to adhere even when same is used for absorbing discharges; consequently there will be no subsequent difficulty in removing the dressing or need for soaking off.

According to one embodiment of the invention, the emollient element of the compound is composed of a mixture of hard and soft paraffin wax, these being so blended that the product will become emollient at body temperature. The medicament, hygroscopic or other substance to effect treatment is added to the mixture of waxes after heating same, and the whole is intimately mixed. Strips of any suitable absorbent substance are then passed through the compound and, if necessary, (i.e. in most cases where a medicament is incorporated) any surplus is removed from the strip by a scraping, rolling or other operation, before and after the compound dries. The strip can now be rolled up if so desired, so as to be ready for use, or it may be cut into pieces of suitable size.

As a modification the compound such as that set forth in the preceding paragraph may be sprayed on to the strip or piece of absorbent material instead of the latter being dipped.

As examples of suitable medicaments that may be employed there are mentioned iodine, acriflavine, and mercurial substances, any of which may be used alone or in combination, but as will be clearly understood any medicinal substance or combination of substances can be used, in cases where a medicament is required.

It will be found that due to the wax or varnish keeping the compound in an

emollient condition, the curative properties of any medicament embodied in the dressing are utilised to a greater and more beneficial extent than has been possible hitherto, the reason being that there is greater absorption of the medicament and non-disturbance of the dressing.

In some cases, it will be required to embody in the compound a hygroscopic substance or substances in addition to or instead of a medicament. In this connection selection can be made from those substances which are known to be hygroscopic and which will not have harmful results. By way of example, the hygroscopic element may be a substance normally crystalline from which the water of crystallisation has been driven off wholly or partly. Magnesium sulphate is a suitable substance. Glycerine can be additionally employed. The hygroscopic substance or compound of substances is added to the wax or varnish and the whole, whilst hot, is intimately mixed by stirring. The absorbent strip is impregnated as above explained but the scraping process is omitted in this case. Whether or not a medicament is incorporated together with the hygroscopic substance or substances will depend on the intended use of the dressing.

The dressing containing a hygroscopic substance as above set forth is applicable for use on wounds and gatherings which require to be evacuated, the evacuation taking place by osmosis.

In some cases and if so desired the dressing made as aforesaid may be of perforated form.

I am aware of Specification No. 117,750 which describes an antiseptic dressing which consists of cotton wool, fibre or other suitable material which is waxed and then impregnated with a solution of flavine or other dye having an antiseptic action.

I am also aware of Specification No. 139,077 which describes the manufacture of a medicinal plaster in which gelatine, glycerine, starch and water are heated and mixed together so as to cause the starch to gelatinize and form a viscous mixture in which the other ingredients are uniformly incorporated. Such a plaster is stated to be soft and flexible at ordinary room temperature in contradistinction to the surgical dressing according to the present invention which only becomes soft at body temperature.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. A surgical dressing comprising an

absorbent substance such as gauze, wool, lint or textile fabric impregnated or coated with a medicinal, hygroscopic or other curative substance, the presence of which is necessary for the treatment of a wound, gathering or the like, and impregnated or coated also with a wax, varnish or equivalent substance having the property of becoming emollient at body temperature but which is firm at ordinary temperature.

2. A surgical dressing comprising an absorbent such as gauze, wool, lint or textile fabric impregnated with a compound which contains a wax, varnish or equivalent substance having the property of becoming emollient at body temperature but which is firm at ordinary temperature and which contains also any medicinal, hygroscopic or other substance, the presence of which is necessary for the treatment of a wound, gathering or the like.

3. A surgical dressing according to Claim 1 or 2, wherein the emollient element of the compound is composed of a mixture of hard and soft paraffin wax.

4. A method of making a surgical dressing which consists in blending hard and soft paraffin wax to form a wax which is emollient at body temperature, adding a medicament, hygroscopic or other curative substance to said wax whilst same is in a heated condition and intimately mixing the whole, and passing pieces or strips of an absorbent substance such as gauze, wool, lint or textile fabric through the compound whilst same is in a molten condition.

5. A method of making the surgical dressing claimed in Claim 2 or 3, which consists in spraying the compound on to the absorbent substance.

6. A method of making the surgical dressing claimed in Claim 1, which consists in impregnating or coating the absorbent material with the curative substance and subsequently spraying on the emollient substance.

7. A method of making a surgical dressing as claimed in Claim 4, 5 or 6, which includes the further step of scraping, rolling or otherwise treating the surface of the impregnated material.

8. A surgical dressing made according to any of the preceding Claims and wherein the compound incorporates both a hygroscopic substance and a medicament.

9. A surgical dressing made according to any of the preceding Claims and wherein the hygroscopic substance incorporated in the compound consists of a normally crystalline substance from which the water of crystallisation has been driven off.

10. A surgical dressing made according to any of the preceding Claims and wherein the compound additionally incorporates glycerine.
- 5 11. A surgical dressing made as herein described.

Dated this 12th day of May, 1941.  
KINGS PATENT AGENCY LIMITED.

By R. HUNTER,  
Secretary.

Registered Patent Agent,  
146A, Queen Victoria Street, London,  
E.C.4,  
Agents for Applicant.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1943.